

AMENDMENTS TO THE CLAIMS:

Please amend claims 1-16 and add newly written claim 19 as follows.

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A ~~deformable mirror~~ structure comprising:
~~a self-deforming mirror having a periphery, wherein said mirror comprises a reflective element provided on a substrate that is secured to a deformable element, wherein the substrate comprises~~ including at least one coolant channel having a pair of inlet and outlet ports both located around the peripheral edge of the substrate, and
a support structure for supporting said mirror around said periphery, said support structure having corresponding inlet and outlet ports fluidly connected to said substrate inlet and outlet ports.

2. (currently amended) A ~~deformable mirror~~ structure as in claim 1, wherein the substrate ~~comprises~~ includes a plurality of coolant channels interconnected by a chamber, each channel terminating in a port ~~having~~ ports located around the ~~peripheral edge~~ periphery of the substrate and ~~wherein the channels are interconnected by a chamber~~.

3. (currently amended) A ~~deformable mirror~~ structure as in claim 2, wherein the plurality of channels intersect to form the chamber.

4. (currently amended) A ~~deformable mirror~~ structure as in claim 3, wherein the chamber is located in a central portion of the substrate and the plurality of channels extend radially from the chamber to the periphery to intersect at the centre of the substrate.

5. (currently amended) A ~~deformable mirror~~ structure as in claim 3, wherein the channels extend in an offset arrangement from a substantially ring-shaped chamber located in a central portion of the substrate to the peripheral edge of the ~~mirror~~ substrate in an offset arrangement, thereby intersecting to form a substantially ring-shaped chamber.

6. (currently amended) A ~~deformable mirror~~ mount structure and a ~~deformable mirror~~ as in claim 1, wherein the support structure mount has comprises a body with a central aperture defined by at least one a supporting elements surface sized and shaped to support the self-deforming mirror when installed, and wherein the mount support structure corresponding inlet and outlet ports is provided with at least a pair of channels that terminate to face the inlet and outlet ports in the substrate mirror when the mirror is installed, further including flexible seals between the channels of the mirror substrate and the mount being connected via flexible seals support structure.

7. (currently amended) A ~~deformable mirror holder~~ and a ~~deformable mirror~~ structure as in claim 6, wherein the flexible seals are O-rings that are positioned to surround the channels in the mirror and mount where they terminate to face each other.

8. (currently amended) A ~~deformable mirror holder and a deformable mirror structure as~~ in claim 6, wherein the ~~mirror comprises~~substrate includes a plurality of channels and the support structure includes a plurality of channels, that terminate to form a plurality of ports in the peripheral edge of the substrate and wherein a channel is provided in the mount for each port, the channel terminating to face its associated port and wherein alternate channels around the periphery of the substrate comprise communicate to an inlet and an outlet ports.

9. (currently amended) A ~~deformable mirror holder and a deformable mirror structure as~~ in claim 6, wherein the central aperture of the mountsupport structure is defined by a plurality of flexible beams, each flexible beam having an end shaped to provide the a supporting surface for the self-deforming mirror and a flexible portion that connects the beam's an end of the beam to the mount's bodya body of the support structure.

10. (currently amended) A ~~deformable mirror holder and a deformable mirror structure as~~ in claim 9, wherein at least one of the flexible beams is generally L-shaped such that one leg of the L-shape provides the flexible portion and the other leg of the L-shape provides the supporting surface ~~of the beam's end~~.

11. (currently amended) A ~~deformable mirror holder and a deformable mirror structure as~~ in claim 10, wherein each flexible beam further includes a shoulder portion for providing support to the periphery of said substrate~~the internal corner of the L-shaped beam has a shoulder that extends part of the way along both legs such that the mirror when installed is supported from~~

~~below by the supporting surface of the flexible beam and from the side by the shoulder of the flexible beam.~~

12. (currently amended) A ~~deformable mirror holder and a deformable mirror structure~~ as in claim 9, wherein each of the channels in the support structure terminate at a gap between an adjacent pairs of flexible beams.

13. (currently amended) A ~~deformable mirror holder and a deformable mirror structure~~ as in claim 12, wherein the channels in the support structure are provided defined by plugs inserted into passages provided in the mount's body of said support structure.

14. (currently amended) A ~~deformable mirror holder and a deformable mirror structure~~ as in claim 13, wherein the flexible seals are O-rings and the flexible beams are shaped to accommodate the plugs and the O-rings provide an interface between that connect the plugs to the mirror's peripheral edge to the periphery of the substrate.

15. (currently amended) A ~~deformable mirror holder and a deformable mirror structure~~ as in claim 13, wherein the channels defined by ~~in~~ the plugs communicate with a pair of channels provided in an outer surface of the mount's support structure body that extends around the aperture.

16. (currently amended) A ~~deformable mirror holder and a deformable mirror structure as~~ in claim 15, wherein channels defined by ~~in~~ alternate plugs communicate with one or the ~~other~~ other, in turn, of the pair of channels in the mount's body in turn support structure body.

Claims 17-18. (cancelled)

19. (new) A mirror structure as in claim 1 wherein said support structure is a flexible support structure.